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Laser Fast

University of Dayton, Ohio (url: http://www.udayton.edu/index.php)

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09.24.2009 | Faculty, Science Saying Mikhail Vorontsov, the University of Dayton's new endowed chair in the Ladar and Optical Communications Institute, likes to work fast is an understatement.

One of his areas of expertise is sending information using laser light that travels nearly 100 miles a millisecond.

And even before stepping foot on campus earlier this month, he had already secured a three-year, $1.6 million grant from the U.S. Army to examine how laser beams can transmit data over long distances and through various atmospheric conditions.

"We are excited about the expertise and level of engagement that professor Vorontsov brings to Dayton," LOCI Director Joe Haus said. "He is a world-renowned researcher who complements our expertise and offers a totally different approach to achieving higher performance remote-sensing systems."

Vorontsov and his team will continue work on the three-year project with the Army and several other projects in Hawaii. They will examine laser beam and image transmission between Hawaiian islands. He plans on taking University of Dayton students with him.

"Going to Hawaii to work on the Air Force's 3.6-meter telescope and send laser beams through it, there will probably be a line (of students)," Vorontsov said. "I hope the ongoing research at LOCI can bring new high-tech jobs to the state and more young people will be interested to stay (in Ohio) to work."

Vorontsov also has been quick to establish ties with local businesses. He is working to test a similar laser connection between his lab in the College Park Center on Brown Street and the Veterans Administration Medical Center in Dayton.

He also is interested in laser communication links between ground stations and satellites and between low-orbit satellites. These high-performance links will eventually replace conventional radio-frequency based communication technology.

Before coming to the University of Dayton, Vorontsov worked in an Army Research Laboratory, at New Mexico State University and the University of Maryland. He also was professor at Moscow State University in the International Laser Center and worked as an invited professor in Germany, France, Italy and Scotland.

The University of Dayton, the U.S. Air Force and regional businesses launched the $3.2 million institute in 2006 to consolidate the brainpower of the region’s ladar researchers to put ladar on a faster track to the battlefield and business. LOCI is based in UD’s College Park Center. Raytheon, Boeing, BAE Systems, Lockheed-Martin, Northrop Grumman and Textron Systems are LOCI's corporate members.

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